



DEPARTMENT OF PERMITTING, ENVIRONMENT, AND REGULATORY
AFFAIRS (PERA)
BOARD AND CODE ADMINISTRATION DIVISION

MIAMI-DADE COUNTY
PRODUCT CONTROL SECTION

11805 SW 26 Street, Room 208

Miami, Florida 33175-2474

T (786) 315-2590 F (786) 315-2599

www.miamidade.gov/building

NOTICE OF ACCEPTANCE (NOA)

MetalTech, Inc.
7635 West 2nd Court
Hialeah, Florida 33014

SCOPE:

This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed and accepted by Miami-Dade County PERA-Product Control Section to be used in Miami Dade County and other areas where allowed by the Authority Having Jurisdiction (AHJ).

This NOA shall not be valid after the expiration date stated below. The Miami-Dade County Product Control Section (In Miami Dade County) and/or the AHJ (in areas other than Miami Dade County) reserve the right to have this product or material tested for quality assurance purposes. If this product or material fails to perform in the accepted manner, the manufacturer will incur the expense of such testing and the AHJ may immediately revoke, modify, or suspend the use of such product or material within their jurisdiction. PERA reserves the right to revoke this acceptance, if it is determined by Miami-Dade County Product Control Section that this product or material fails to meet the requirements of the applicable building code.

This product is approved as described herein, and has been designed to comply with the High Velocity Hurricane Zone of the Florida Building Code.

DESCRIPTION: 0.031" (min.) Steel Storm Panels Shutter

APPROVAL DOCUMENT: Drawing No. 98001, titled "Maximum Impact Storm Panel", sheets 1 through 7 of 7, prepared by Ramms Engineering, Inc., dated January 10, 1998, last revision dated January 06, 2006, signed and sealed by Robert S. Monsour, P.E., bearing the Miami-Dade County Product Control Renewal stamp with the Notice of Acceptance number and the expiration date by the Miami-Dade County Product Control Section.

MISSILE IMPACT RATING: Large and Small Missile Impact Resistant

LABELING: Each panel shall bear a permanent label with the manufacturer's name or logo, city, state, the following statement: "Miami-Dade County Product Control Approved", and NOA number, per TAS-201, TAS-202, and TAS-203, unless otherwise noted herein.

RENEWAL of this NOA shall be considered after a renewal application has been filed and there has been no change in the applicable building code negatively affecting the performance of this product.

TERMINATION of this NOA will occur after the expiration date or if there has been a revision or change in the materials, use, and/or manufacture of the product or process. Misuse of this NOA as an endorsement of any product, for sales, advertising or any other purposes shall automatically terminate this NOA. Failure to comply with any section of this NOA shall be cause for termination and removal of NOA.

ADVERTISEMENT: The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

INSPECTION: A copy of this entire NOA shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This NOA **renews** NOA # 11-0304.01 and consists of this page 1, evidence submitted pages E-1, E-2, E-3, E-4, & E-5 as well as approval document mentioned above.

The submitted documentation was reviewed by **Helmy A. Makar, P.E., M.S.**



Helmy A. Makar
05/03/2012

NOA No. 12-0320.26
Expiration Date: 03/22/2017
Approval Date: 05/03/2012
Page 1

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

1. EVIDENCE SUBMITTED UNDER PREVIOUS APPROVAL #98-0304.03

A. DRAWINGS:

1. *Drawing No. 98001, titled "24 ga. maximum impact storm panel", prepared by Ramms Engineering, Inc., dated January 10, 1998, last revised on August 14, 1998, sheets 1 through 7 of 7, signed and sealed by Robert S. Monsour, P.E.*

B. TESTS:

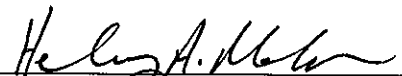
1. *Test report on Large Missile Impact Test, Cyclic Wind Pressure Test and Uniform Static Air Pressure Test of a 24 ga. steel storm panels, prepared by Construction Testing Corporation, Report No. 98-003, dated 02/27/98, signed and sealed by Christopher G. Tyson, P.E.*
2. *Test report on Large Missile Impact Test, Cyclic Wind Pressure Test and Uniform Static Air Pressure Test of aluminum storm panels, prepared by Construction Testing Corporation, Report No. 98-005, dated 05/21/98, signed and sealed by Christopher G. Tyson, P.E.*

C. CALCULATIONS:

1. *Comparative Analysis, dated February 18, 1998, pages 1 through 4, prepared by Ramms Engineering, Inc., signed and sealed by Robert S. Monsour, P.E.*
2. *Revised calculations for Comparative Analysis and Anchor Spacing Analysis, dated June 4, 1998, pages 1 through 49, prepared by Ramms Engineering, Inc., signed and sealed by Robert S. Monsour, P.E.*
3. *Revised calculations for Anchor Spacing Analysis, dated August 3, 1998, pages 1 through 35, prepared by Ramms Engineering, Inc., signed and sealed by Robert S. Monsour, P.E.*
4. *Revised calculations for Anchor Spacing Analysis, dated September 1, 1998, pages 1 through 94, prepared by Ramms Engineering, Inc., signed and sealed by Robert S. Monsour, P.E.*

D. MATERIAL CERTIFICATION:

1. *Mill Certified Inspection Report dated December 10, 1997, prepared by Kieh Co., for steel panel.*
2. *Certified Tensile Test Report by Certified Testing Laboratories, Report No. CTL-076D, dated 02/04/98, signed and sealed by Ramesh Patel, P.E.*



**Helmy A. Makar, P.E., M.S.
PERA, Product Control Unit Supervisor**

NOA No. 12-0320.26

Expiration Date: 03/22/2017

Approval Date: 05/03/2012

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

2. EVIDENCE SUBMITTED UNDER PREVIOUS APPROVAL #00-1207.03

A. DRAWINGS:

1. *Drawing No. 98001, titled "24 ga. maximum impact storm panel", prepared by Ramms Engineering, Inc., dated January 10, 1998, last revised on December 15, 2000, sheets 1 and 5 of 7, August 14, 1998, sheets 2, 3, 6, and 7 of 7, and on December 4, 2000, sheet 4 of 7, all signed and sealed by Robert S. Monsour, P.E. on December 22, 2000.*

B. TESTS:

1. *None.*

C. CALCULATIONS:

1. *None.*

D. MATERIAL CERTIFICATION:

1. *None.*

3. EVIDENCE SUBMITTED UNDER PREVIOUS APPROVAL #01-0205.01

A. DRAWINGS:

1. *Drawing No. 98001, titled "24 ga. maximum impact storm panel", prepared by Ramms Engineering, Inc., dated January 10, 1998, last revised on January 17, 2001, signed and sealed by Robert S. Monsour, P.E. on January 29, 2001.*

B. TESTS:

1. *None.*

C. CALCULATIONS:

1. *None.*

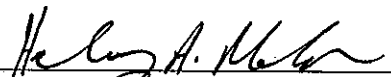
D. MATERIAL CERTIFICATION:

1. *None.*

4. EVIDENCE SUBMITTED UNDER PREVIOUS APPROVAL # 01-1224.07

A. DRAWINGS

1. *Drawing No. 98001, titled " Maximum Impact Storm Panel ", sheets 1 through 7 of 7, prepared by Ramms Engineering, Inc., dated January 10, 1998, last revision dated September 09, 2002 signed and sealed by Robert S. Monsour, P.E.*



Helmy A. Makar, P.E., M.S.
PERA, Product Control Unit Supervisor
NOA No. 12-0320.26
Expiration Date: 03/22/2017
Approval Date: 05/03/2012

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

B. TESTS

1. *Test reports on Large Missile Impact Test per SFBC, PA 201-94 along with installation diagram of Steel Storm Panel Shutter, prepared by American Test Lab of South Florida, Test Report No. 0 502.02-02, dated May 09, 2002, signed and sealed by William R. Mehner, P.E.*
2. *Addendum to Test reports on Large Missile Impact Test per SFBC, PA 201-94 of Steel Storm Panel Shutter, prepared by American Test Lab of South Florida, Test Report No. 0 502.02-02, dated July 09, 2002, signed and sealed by William R. Mehner, P.E.*

C. CALCULATIONS

1. *Comparative analysis, prepared by prepared by Ramms Engineering, Inc., dated January 14, 2002, signed and sealed by Robert S. Monsour, P.E.*

D. MATERIAL CERTIFICATIONS

1. *None.*

5. EVIDENCE SUBMITTED UNDER PREVIOUS APPROVAL # 06-0110.04

A. DRAWINGS

1. *Drawing No. 98001, titled " Maximum Impact Storm Panel ", sheets 1 through 7 of 7, prepared by Ramms Engineering, Inc., dated January 10, 1998, last revision dated January 06, 2006, signed and sealed by Robert S. Monsour, P.E.*

B. TESTS

1. *None.*

C. CALCULATIONS

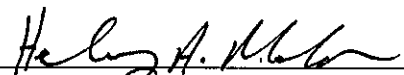
1. *Revised calculations for Anchor Spacing Analysis, dated January 06, 2006, 88 pages, prepared by Ramms Engineering, Inc., signed and sealed by Robert S. Monsour, P.E.*

D. QUALITY ASSURANCE

1. *By Miami-Dade County Building Code Compliance Office.*

E. MATERIAL CERTIFICATIONS

1. *None.*



Helmy A. Makar, P.E., M.S.

PERA, Product Control Unit Supervisor

NOA No. 12-0320.26

Expiration Date: 03/22/2017

Approval Date: 05/03/2012

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

6. EVIDENCE SUBMITTED UNDER PREVIOUS APPROVAL #11-0304.01

A. DRAWINGS

1. *Drawing No. 98001, titled " Maximum Impact Storm Panel ", sheets 1 through 7 of 7, prepared by Ramms Engineering, Inc., dated January 10, 1998, last revision dated January 06, 2006, signed and sealed by Robert S. Monsour, P.E.*

B. TESTS

1. *None. One year renewal to give manufacturer time to submit a verification test report.*

C. CALCULATIONS

1. *None.*

D. QUALITY ASSURANCE

1. *By Miami-Dade County Building and Neighborhood Compliance Department (BNC).*

E. MATERIAL CERTIFICATIONS

1. *None.*

F. OTHERS

1. *Conformance letter from Ramms Engineering, Inc., dated March 24, 2011, certifying compliance with the Florida Building Code, 2007 Edition, signed and sealed by Robert S. Monsour, P.E.*

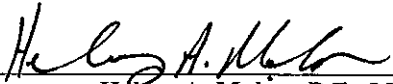
7. NEW EVIDENCE SUBMITTED

A. DRAWINGS

1. *Drawing No. 98001, titled " Maximum Impact Storm Panel ", sheets 1 through 7 of 7, prepared by Ramms Engineering, Inc., dated January 10, 1998, last revision dated January 06, 2006, signed and sealed by Robert S. Monsour, P.E.*

B. TESTS

1. *Test report on Large Missile Impact Test, Cyclic Wind Pressure Test and Uniform Static Air Pressure Test of a 24 ga. steel storm panels, prepared by Blackwater Testing, Inc., Report No. AG-11-001, dated 03/12/12, signed and sealed by yamil G. Kuri, P.E.*



Helmy A. Makar, P.E., M.S.
PERA, Product Control Unit Supervisor
NOA No. 12-0320.26
Expiration Date: 03/22/2017
Approval Date: 05/03/2012

MetalTech, Inc.

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

C. CALCULATIONS

1. *None.*

D. QUALITY ASSURANCE

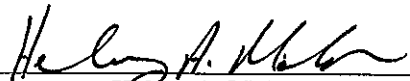
1. *By Miami-Dade County Department of Permitting, Environment, and Regulatory Affairs (PERA).*

E. MATERIAL CERTIFICATIONS

1. *Certified report of Chemical Analysis and mechanical tests by The techs.*

F. OTHERS

1. *Conformance letter from Ramms Engineering, Inc., dated March 20, 2012, certifying compliance with the Florida Building Code, 2010 Edition, signed and sealed by Robert S. Monsour, P.E.*



Helmy A. Makar, P.E., M.S.

PERA, Product Control Unit Supervisor

NOA No. 12-0320.26

Expiration Date: 03/22/2017

Approval Date: 05/03/2012

COMPLIES WITH:
FLORIDA BUILDING CODE
TESTED TO TAS201, TAS202 AND TAS203

24 ga.

DESIGN CRITERIA:

WIND LOADS TO BE CALCULATED AS PER ASCE 7

NO INCREASE IN ALLOWABLE STRESS WAS USED IN THE DESIGN OF THIS PRODUCT

GENERAL NOTES:

ALL ALUMINUM EXTRUSIONS TO BE ALLOY 6063-T6 OR EQUAL

STORM PANELS SHALL BE:

24 GAUGE STEEL, ASTM A653 SQ GRADE E MIN. $F_y = 90$ K.S.I. MINIMUM VALUE WITH .031 MINIMUM THICKNESS
HOT DIP COATED WITH A NOMINAL WIDTH OF 12 1/2"

THE STORM PANEL SHUTTER MAY BE INSTALLED VERTICALLY OR HORIZONTALLY, IN ACCORDANCE TO THE DETAILED SPECIFICATIONS HEREIN.

PANELS MAY BE NOTCHED OR MITERED TO ACCOMMODATE AN OBSTRUCTION
PANELS MAY HAVE A RIPPLED SURE GRIP OR A HEMMED EDGE

ANCHORAGE OF THE SHUTTER SYSTEM TO CONCRETE OR MASONRY SHALL CONSIST OF THE FOLLOWING OR EQUAL WITH MINIMUM ULTIMATE LOAD VALUES SHOWN

- 1/4" DIA. RAWL LOK/BOLT ANCHOR (SLEEVED DRIVE ANCHOR)
MIN. TENSILE 1190 - MIN. SHEAR 1320 - 1 1/8" MIN. EMBED. IN CONCRETE
MIN. TENSILE 1200 - MIN. SHEAR 1270 - 1 1/8" MIN. EMBED. IN MASONRY
- 1/4-20 RAWL CALK-IN ANCHOR (MACHINE SCREW ANCHOR) WITH 1/4-20 BOLTS
MIN. TENSILE 1870 - MIN. SHEAR 1730 - 7/8" MIN. EMBED. IN CONCRETE
MIN. TENSILE 980 - MIN. SHEAR 1340 - 7/8" MIN. EMBED. IN MASONRY
- 1/4" PERMA-SEAL TAPPER BY RAWL (MASONRY SCREWS VARIOUS HEAD TYPES)
MIN. TENSILE 1520 - MIN. SHEAR 1980 - 1 1/2" MIN. EMBED. IN CONCRETE
MIN. TENSILE 880 - MIN. SHEAR 1270 - 1 1/4" MIN. EMBED. IN MASONRY
- 1/4" ZAMAC NAILIN BY RAWL (ZAMAC HAMMER DRIVES)
MIN. TENSILE 980 - MIN. SHEAR 1400 - 1 3/8" MIN. EMBED. IN CONCRETE
MIN. TENSILE 730 - MIN. SHEAR 1320 - 1 1/4" MIN. EMBED. IN MASONRY

ANCHORAGE TO WOOD CONSTRUCTION SHALL BE 1/4" STEEL LAGS OR LARGER WITH 1" MIN. THREAD PENETRATION, 1/4-20 BRASS WOOD BUSHINGS OR 1/4" ELCO PANEL MATES OR MASONRY SCREW WITH 1 7/8" MIN. THREAD PENETRATION.

REFER TO SHEETS 5, 6 & 7 OF 7 FOR ANCHOR SPACING AND MINIMUM EMBEDMENTS

IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE SOUNDNESS OF THE STRUCTURE TO WITHSTAND THE ADDITIONAL LOADS AND INSURE PROPER ANCHORAGE.

EACH PANEL SHALL BEAR A PERMANENT LABEL OR STAMP SHOWING
" METALTECH, INC. HIALEAH, FL " " DADE COUNTY PRODUCT CONTROL APPROVED "

WARNING TO OWNER OR TENANT LOCATED IN EACH HEADER OR ONE PANEL OF EACH OPENING, STATING " STORM PANELS WILL NOT OFFER HURRICANE PROTECTION UNLESS ALL REINFORCING STRAPS OR BOLTS ARE PROPERLY INSTALLED, WHEN REQUIRED "

PERMANENT FASTENER COMPONENTS, EMBEDDED ANCHOR BOLTS, THREADED CONES OR METAL SHIELDS, NOT IN USE, MUST BE PROTECTED AGAINST CORROSION, CONTAMINATION AND DAMAGE AT ALL TIME.

PRODUCT RENEWED
as complying with the Florida
Building Code
Acceptance No 11-0304-01
Expiration Date 03/22/2012
By *Helmut A. M...*
Miami Dade Product Control

PRODUCT REVISED
as complying with the Florida
Building Code
Acceptance No 06-0110-04
Expiration Date 03/22/2011
By *Helmut A. M...*
Miami Dade Product Control
Division

ROBERT S. MONSOUR, PE
EB-0006024
RAMS ENGINEERING, INC.

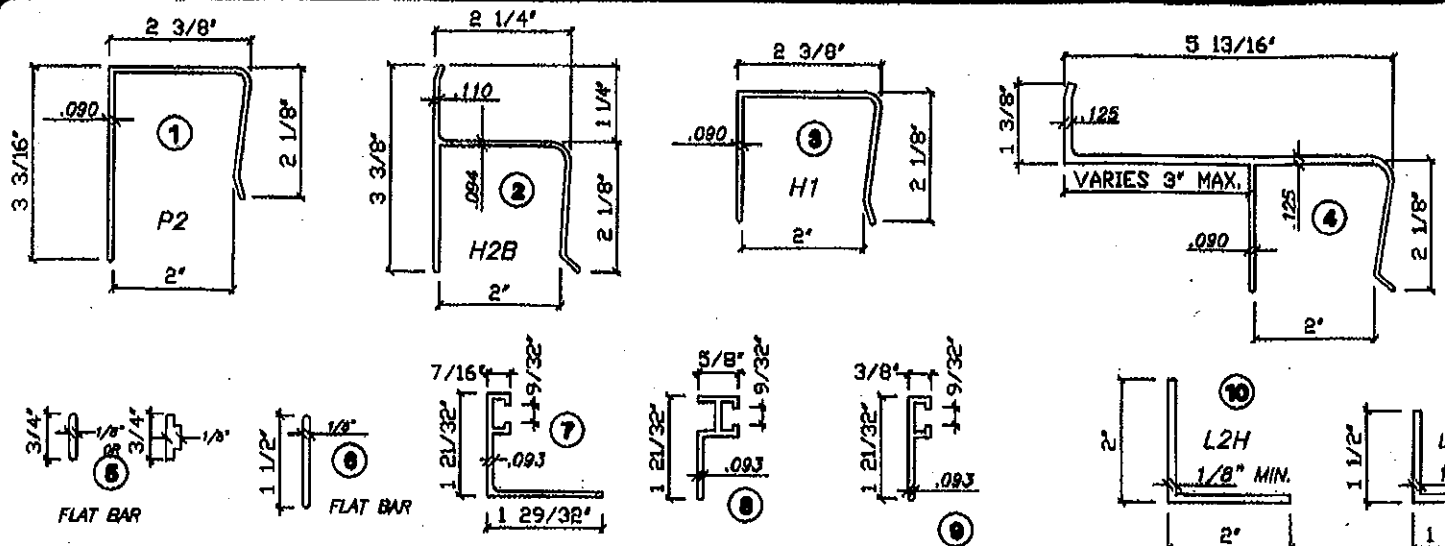
BUILDING CODE COMPLIANCE

REVISIONS	BY
03/20/98	SP
06/12/98	SP
08/14/98	SP
12/15/00	SP
01/17/01	SP
07/15/02	SP
09/09/02	SP
01/05/06	SP

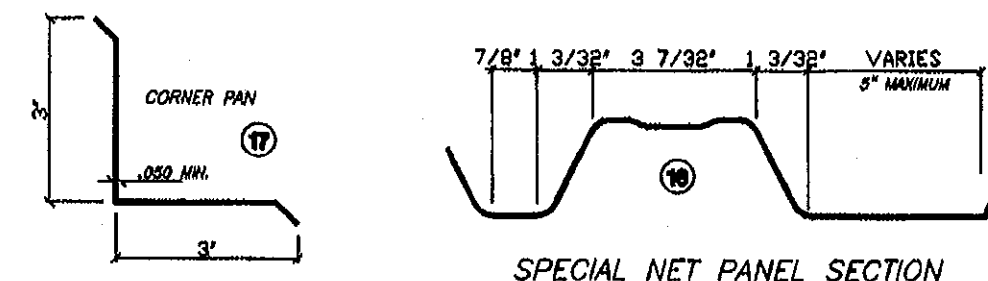
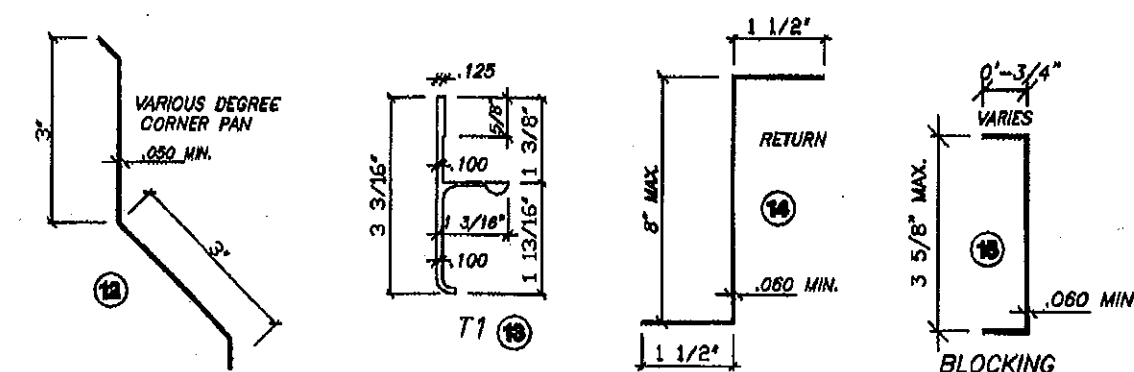
RAMS ENGINEERING, INC.
Structural Design
2155 W. 76th STREET, SUITE 311
HIALEAH, FLORIDA 33016
EB 0006024

METALTECH, INC.
7635 W. SECOND CT. HIALEAH, FL 33014
EST. 1957

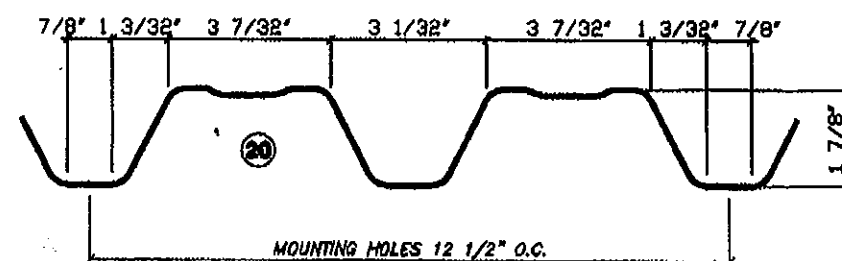
SEP/JRB
01/10/99
SHOWN
98001
1
7



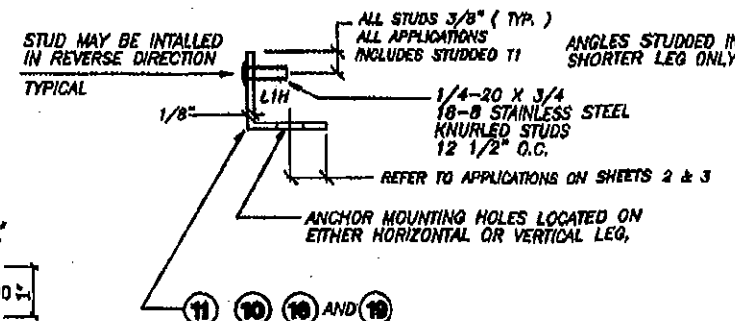
VARIOUS TYPES OF F-TRACK NOT SHOWN



SPECIAL NET PANEL SECTION

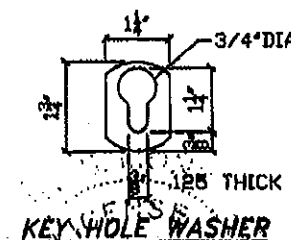


CROSS SECTIONS

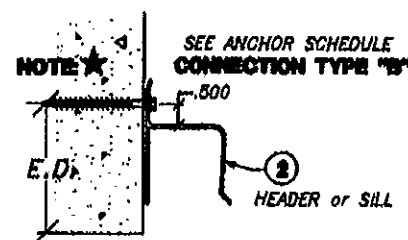


STUDED ANGLE DETAIL

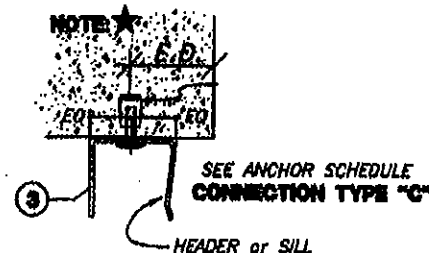
1/8" x 1 1/2" FLAT STUDED STRAP MAY BE USED IN PLACE OF ANGLE



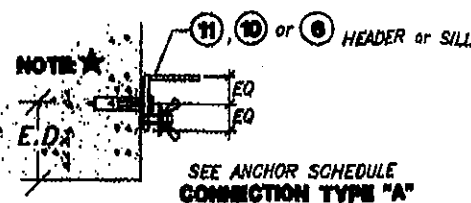
KEY HOLE WASHER



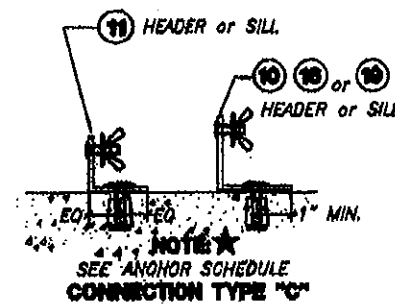
DETAIL 1



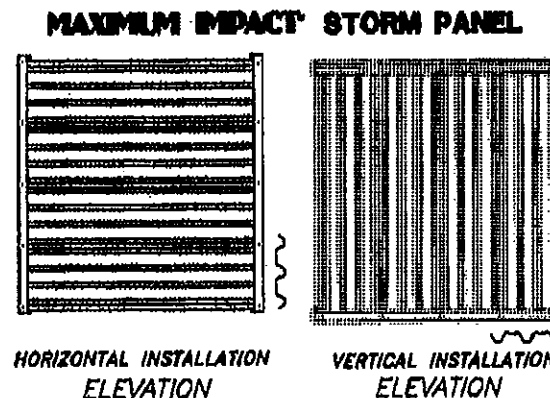
DETAIL 2



DETAIL 3

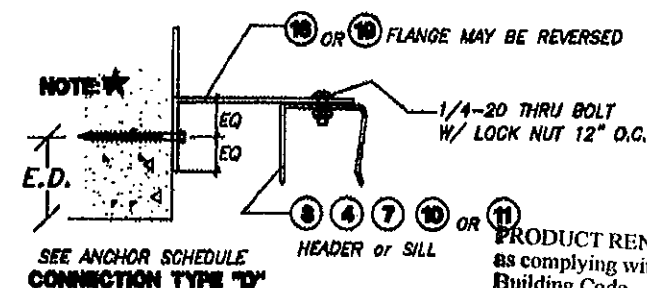


DETAIL 4

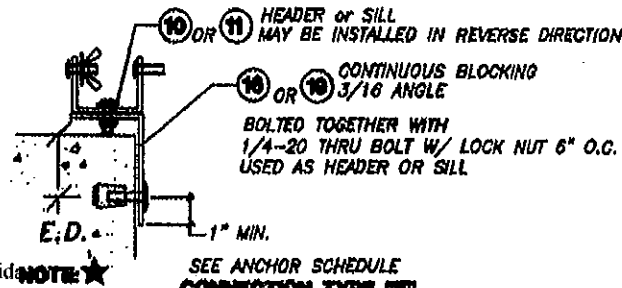


HORIZONTAL INSTALLATION ELEVATION

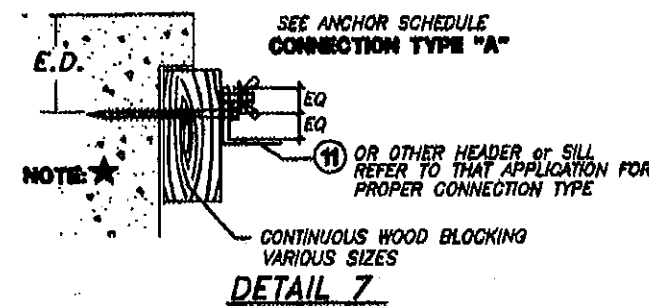
VERTICAL INSTALLATION ELEVATION



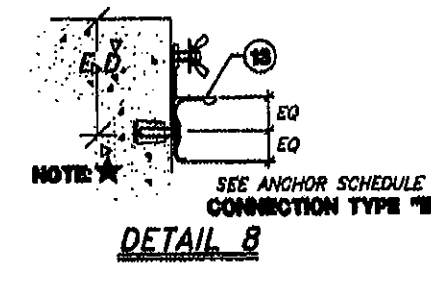
DETAIL 5



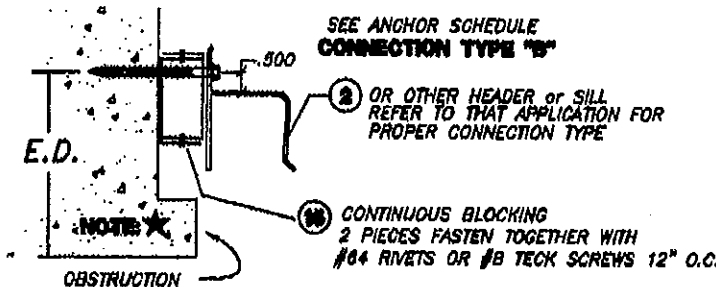
DETAIL 6



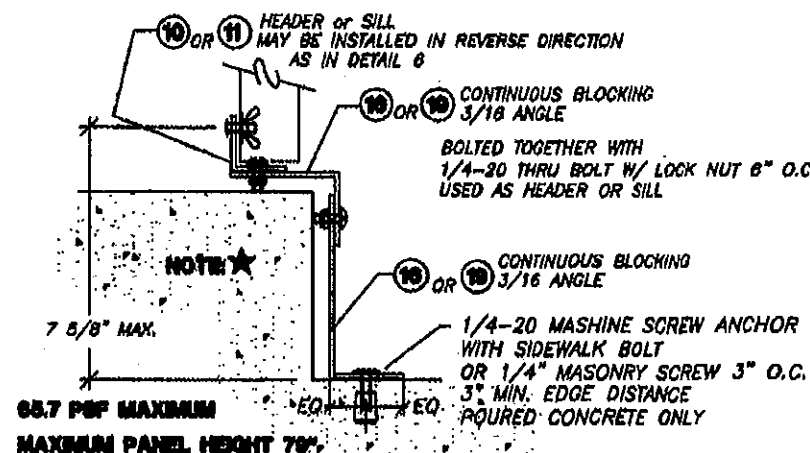
DETAIL 7



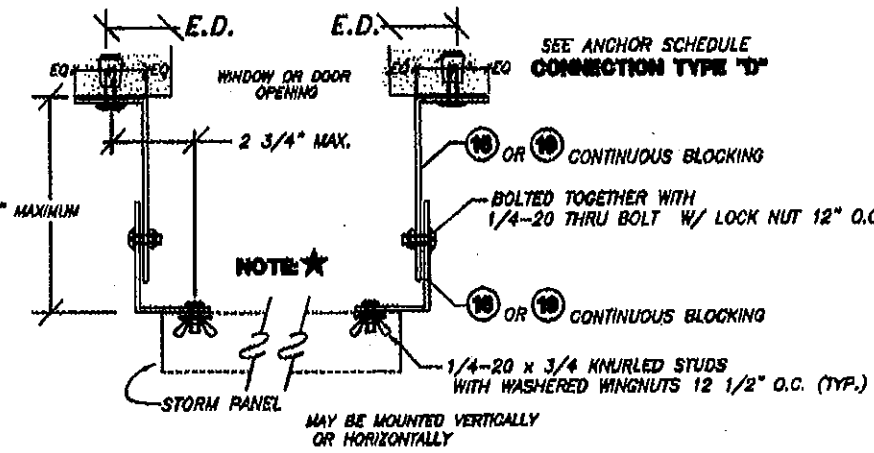
DETAIL 8



DETAIL 9



DETAIL 10



DETAIL 11

NOTE: ★

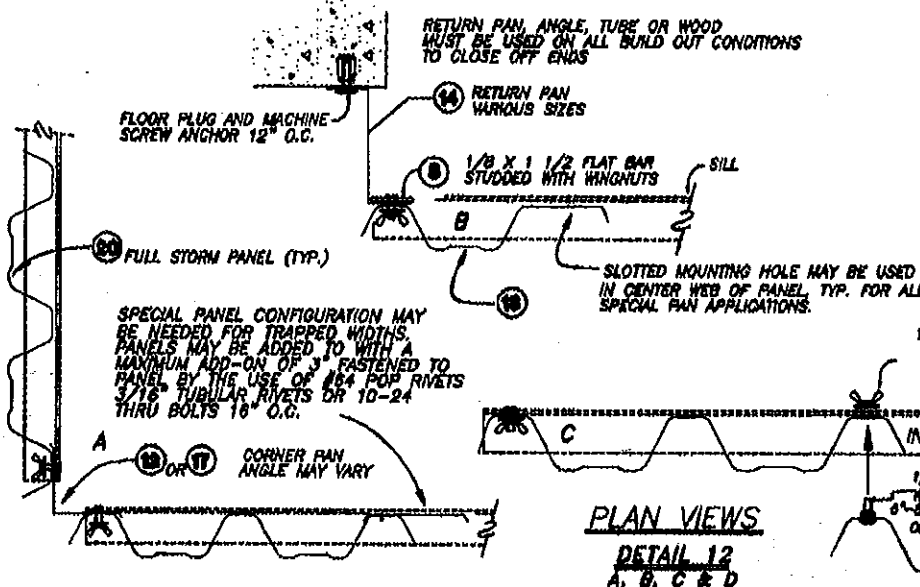
IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE SOUNDNESS OF THE STRUCTURE TO WITHSTAND THE ADDITIONAL LOADS AND INSURE PROPER ANCHORAGE. SHUTTER SYSTEM MAY BE INSTALLED INTO WOOD, CONCRETE, MASONRY.

WHEN ANCHORING TO WOOD, THE WOOD MUST BE A MINIMUM 2 X 4 EQUAL TO #2 SOUTHERN PINE WITH 0.55 SPECIFIC GRAVITY AND STRUCTURALLY PART OF THE FRAMING STRUCTURE OR SECURELY ATTACHED TO FRAMING STRUCTURE

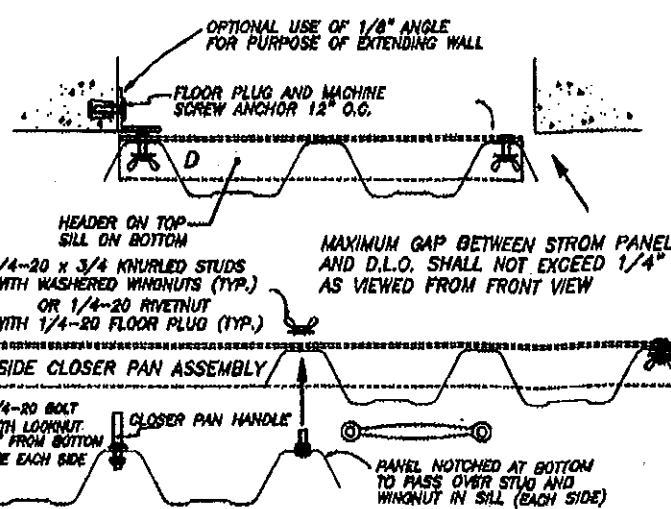
PRODUCT RENEWED as complying with the Florida Building Code Acceptance No. 11-0304.01 Expiration Date 03/22/2012 By Helmut A. Miller Miami Dade Product Control

PRODUCT REVISED as complying with the Florida Building Code Acceptance No. 06-0110.04 Expiration Date 03/22/2011 By Helmut A. Miller Miami Dade Product Control Division

ROBERT S. MONSOUR, PE
EB-0006024
RAMMS ENGINEERING, INC.



PLAN VIEWS
DETAIL 12
A, B, C & D



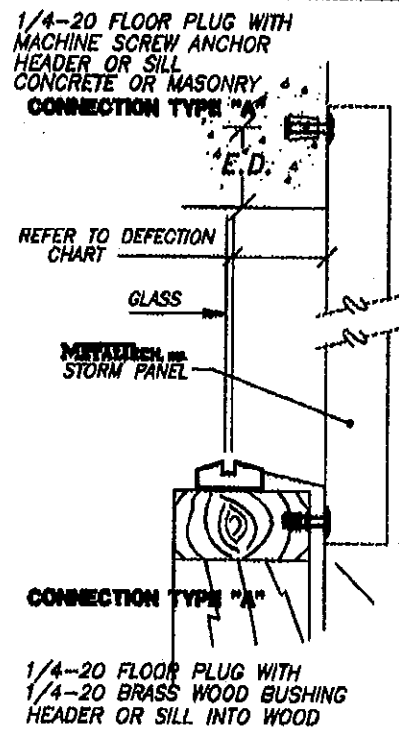
REVISIONS	BY
03/20/98	SP
06/12/98	SP
08/14/98	SP
01/17/01	SP
01/06/06	SP

RAMMS ENGINEERING, INC.
Structural Design
2100 W. 79th STREET, SUITE 311
MIAMI, FLORIDA 33155
EST. 1957
EB 0006024

METATECH, INC.
EST. 1957
7635 W. SECOND CT. HIALEAH, FL 33014

SEP	JUN	RES
01/10/08		
SHOWN		
2		
7		

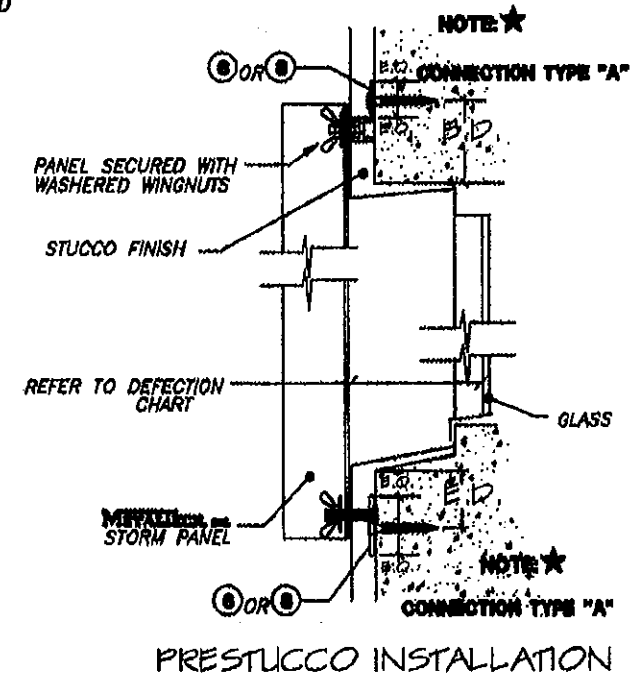
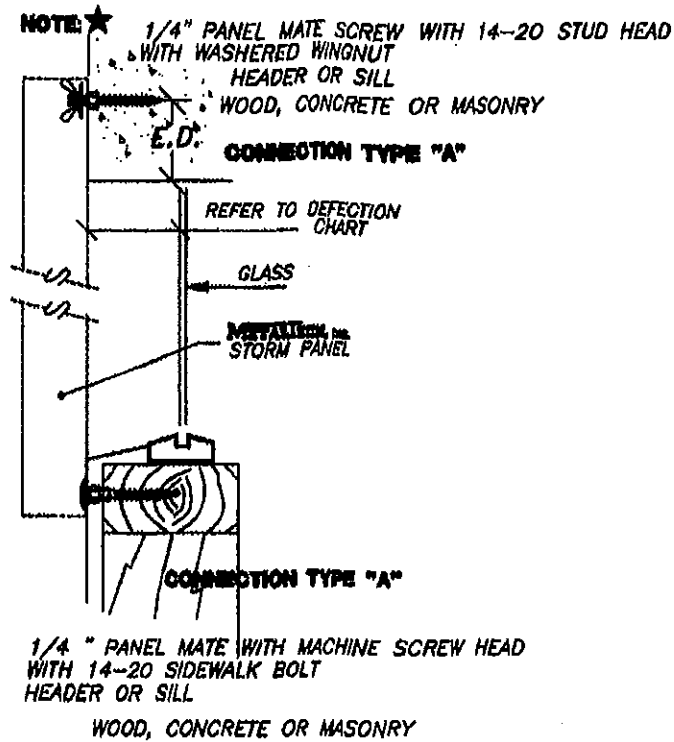
BUILDING CODE COMPLIANCE



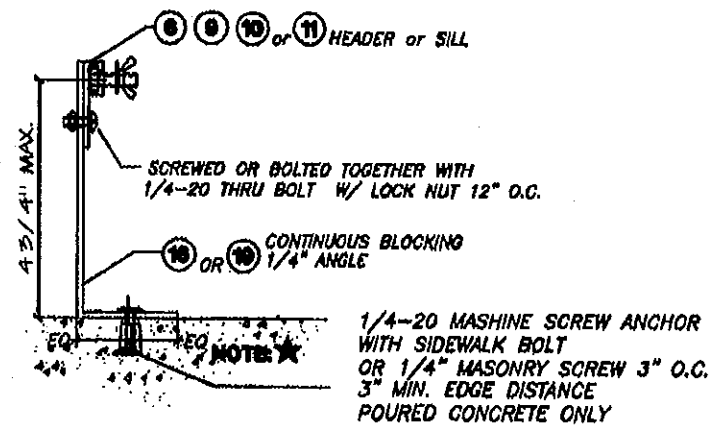
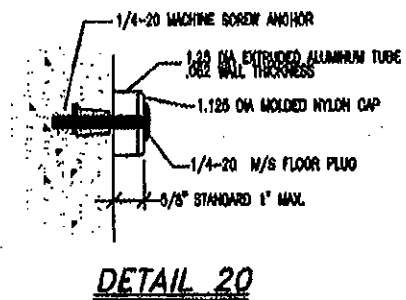
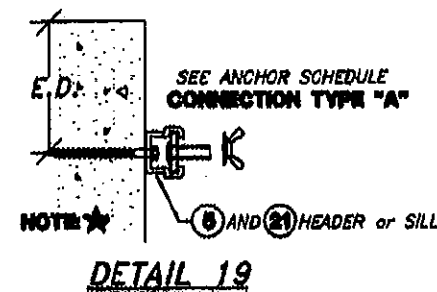
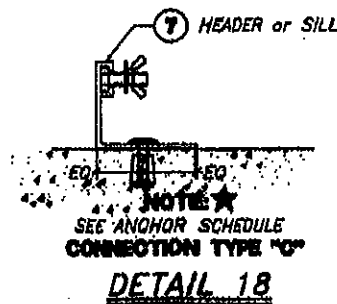
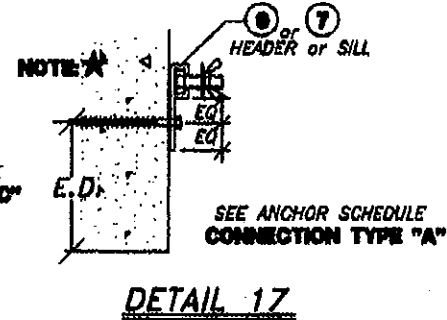
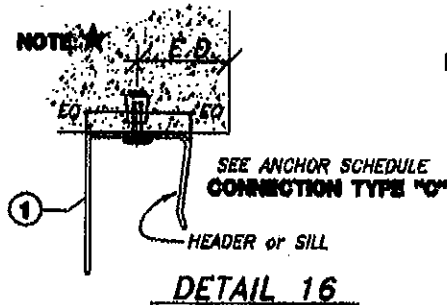
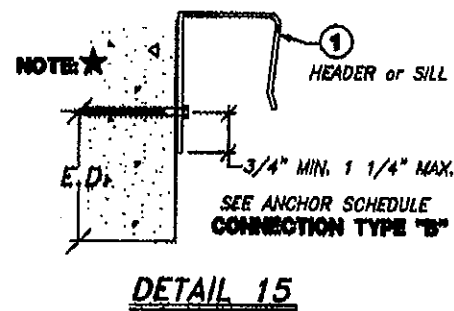
NOTE: THE METALTECH STORM PANEL MAY BE INSTALLED WITHOUT THE USE OF AN EXTRUDED HEADER OR SILL. THE SHUTTER MAY BE ANCHORED DIRECTLY TO THE STRUCTURE WITH THE USE OF ONE OR A COMBINATION OF DETAIL 13

NOTE: ★

DETAIL 13



DETAIL 14



NOTE: ★

IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE SOUNDNESS OF THE STRUCTURE TO WITH STAND THE ADDITIONAL LOADS AND INSURE PROPER ANCHORAGE. SHUTTER SYSTEM MAY BE INTSALL INTO WOOD, CONCRETE, MASONRY.

WHEN ANCHORING TO WOOD, THE WOOD MUST BE A MINIMUM 2 X 4 EQUAL TO #2 SOUTHERN PINE WITH D.55 SPECIFIC GRAVITY AND STRUCTURALLY PART OF THE FRAMING STRUCTURE OR SUCURELY ATTACHED TO FRAMING STRUCTURE

PRODUCT RENEWED as complying with the Florida Building Code Acceptance No 12-0320.26 Expiration Date 03/22/2017 By Helmut A. Miller Miami Dade Product Control

PRODUCT RENEWED as complying with the Florida Building Code Acceptance No 11-0304.01 Expiration Date 03/22/2012 By Helmut A. Miller Miami Dade Product Control

PRODUCT REVISED as complying with the Florida Building Code Acceptance No 06-0110.04 Expiration Date 03/22/2011 By Helmut A. Miller Miami Dade Product Control Division

ROBERT S. MONSOUR, PE
EB-0008024
RAMMS ENGINEERING, INC.

BUILDING CODE COMPLIANCE

REVISIONS	BY
03/20/98	SP
04/20/98	SP
06/12/98	SP
08/14/98	SP
01/17/01	SP
01/11/02	SP
01/06/06	SP

RAMMS ENGINEERING, INC.
Standard Design
1100 W. 70th STREET, SUITE 313
MIAMI, FLORIDA 33146
EB 0008024

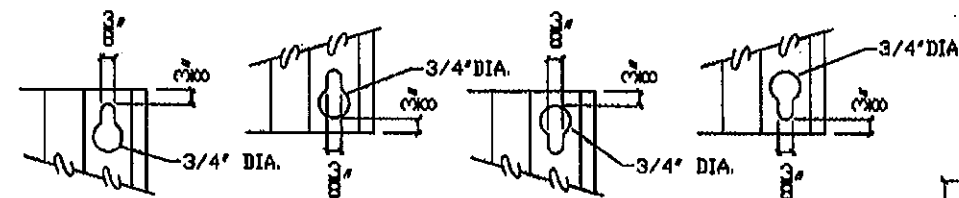
METALTECH, INC.
7835 W. SECOND CT. HALEN, FL 33014
EST. 1957

SEP	JUN	RSN
01/10/97		
SHOWN		
99001		
3		
7		

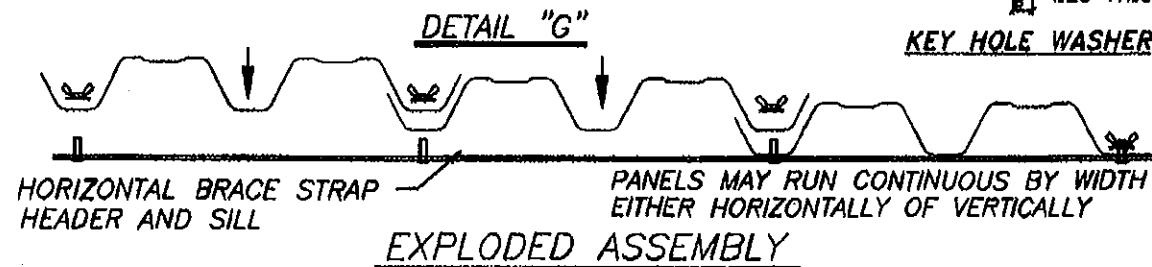
24 ga. STEEL

DESIGN PRESSURE	PANEL SPAN
21.93	142"
25.51	139"
29.99	136"
35.36	132"
37.44	130"
39.10	129"
40.77	127"
44.40	124"
47.81	123"
51.23	119"
58.06	112"
61.47	109"
66.85	104"
71.46	100"
75.30	95"
81.45	88"
86.83	82"
91.44	78"

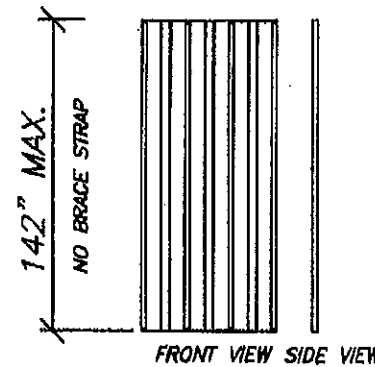
USE 59.5 P.S.F. COLUMN AND 124" PANEL SPAN ON ANCHOR SCHEDULE FOR ANCHOR SPACING FOR SPANS OVER 124"



FASTENER MUST BE IN NARROW PORTION OF KEY HOLE, IF NOT A KEY HOLE WASHER SHOULD BE USED
MOUNTING HOLE MAY ALSO BE A 9/16" DIA. CIRCLE



THE METALTECH STORM PANELS MAY BE INSTALLED WITH OR WITHOUT THE HORIZONTAL BRACE STRAP. REFER TO PANEL DEFLECTION CHARTS.



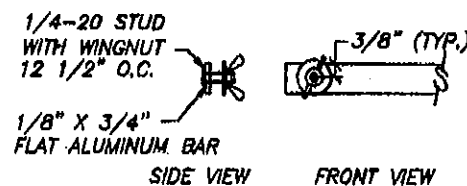
142" MAX. PANEL HEIGHT
NO PANEL STRAP
IS REQUIRED

HIGH VELOCITY HURRICANE ZONE PANEL DEFLECTION CHART WITHOUT HORIZONTAL STRAP

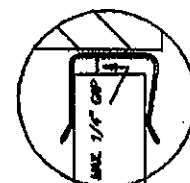
PANEL HEIGHT	0"-90"	90"-142"
WALL MOUNT	2 5/8"	3 1/2"
INSIDE MOUNT	2 5/8"	3 1/2"
BUILD OUT	2 5/8"	3 1/2"

MINIMUM DISTANCE BETWEEN GLASS AND PANEL

HORIZONTAL BRACE STRAP



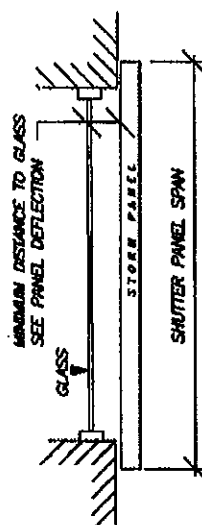
DETAIL "E"



MAXIMUM GAP BETWEEN PANEL AND HEADER IS 1/4" (TYP.)

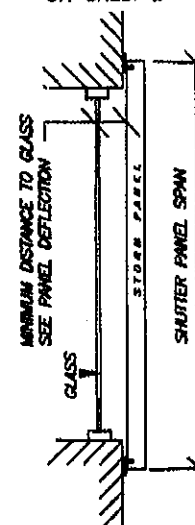
DETAIL "F"

DETAIL 13 ON SHEET 3



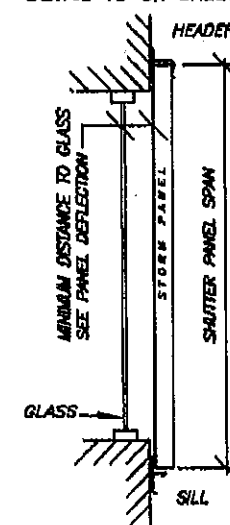
DETAIL 13 ON SHEET 3

DETAIL 3, 4, & 8 ON SHEET 2



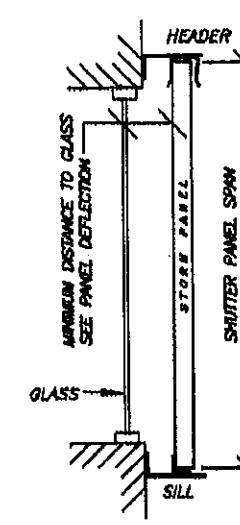
DETAIL 3, 4, & 8 ON SHEET 2

DETAIL 1 ON SHEET 2
DETAIL 15 ON SHEET 3



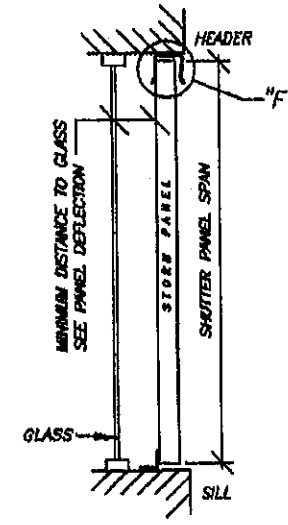
DETAILS 3, 4 AND 8 ON SHEET 2

DETAILS 5, 7, 9, 10 AND 11 ON SHEET 2



DETAILS 5, 7, 9, 10 AND 11 ON SHEET 2

DETAIL 2 ON SHEET 2
DETAIL 16 ON SHEET 3



DETAIL 4 ON SHEET 2

HEADER AND SILL TYPE MAY VARY, DEPENDING ON APPLICATION

WALL MOUNT

ANCHORING PANEL TOP & BOTTOM NO HDR. OR SILL

WALL MOUNT

ANCHORING PANEL TOP & BOTTOM WITH STUDDED HDR/SILL

WALL MOUNT

WITH HDR. AND SILL

BUILD OUT

WITH HDR. AND SILL

INSIDE MOUNT

WITH HDR. AND SILL

TYPICAL SECTION VIEWS

PRODUCT RENEWED as complying with the Florida Building Code
Acceptance No 12-0320.26
Expiration Date 03/22/2017

By *Robert S. Monsour*
Miami Dade Product Control

ROBERT S. MONSOUR, PE
EB-0006024
RAMS ENGINEERING, INC.

PRODUCT RENEWED as complying with the Florida Building Code
Acceptance No 11-0304.01
Expiration Date 03/22/2012

By *Robert S. Monsour*
Miami Dade Product Control

PRODUCT REVISED as complying with the Florida Building Code
Acceptance No 06-0110.04
Expiration Date 03/22/2011

By *Robert S. Monsour*
Miami Dade Product Control
Division

BUILDING CODE COMPLIANCE

RAMS ENGINEERING, INC.
Structural Design

METALTECH, INC.
7835 W. SECOND CT. MIAMI, FL 33014



REVISIONS	BY
03/20/98	SP
06/12/98	SP
08/14/98	SP
12/04/00	SP
01/17/01	SP
01/11/02	SP
09/09/02	SP

SEP/10/08
01/10/08
SHOWN
88001
4
7

ANCHOR SCHEDULE

ANCHOR SPACING vs DESIGN PRESSURE AND CONNECTION TYPE

ANCHOR SPACING vs DESIGN PRESSURE AND CONNECTION TYPE			UP TO 59.6 PSF															UPTO 71.5 PSF														
			POURED CONCRETE					CONCRETE BLOCK					POURED CONCRETE					CONCRETE BLOCK														
			CONNECTION TYPE					CONNECTION TYPE					CONNECTION TYPE					CONNECTION TYPE														
ANCHOR TYPE	PANEL	E.D.	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E					
	88" SPAN	3"	16	13	8	13	13	16	13	10	13	13	16	13	7	13	13	16	13	8	13	13	16	13	8	13	13					
		2"	16	13	7	13	13	16	13	8	13	13	16	13	6	13	13	16	13	6	13	13	16	13	6	13	13					
		1 1/4"	16	13	6	13	13	16	13	6	13	13	14	13	4	13	13	14	13	4	13	13	14	13	4	13	13					
	88" SPAN	3"	16	13	6	13	13	16	13	7	13	13	14	6	5	9	10	14	6	6	9	10	14	6	6	9	10					
		2"	15	11	5	13	13	15	11	6	13	13	12	6	4	8	9	12	6	5	8	9	12	6	5	8	9					
		1 1/4"	13	10	4	13	13	13	10	5	13	13	11	5	3	7	8	11	5	4	7	8	11	5	4	7	8					
	105" span	3"	14	6	5	9	10	14	7	6	9	10	11	4	4	5	4	12	4	5	6	4	12	4	5	6	4					
		2"	12	6	4	8	9	12	6	5	8	9	10	4	4	5	4	10	4	4	5	4	10	4	4	5	4					
		1 1/4"	11	5	3	7	8	11	5	4	7	8	9	3	3	4	3	9	3	3	4	3	9	3	3	4	3					
	124" span	3"	11	4	4	5	4	12	4	5	5	4																				
		2"	10	4	4	5	4	10	4	4	5	4																				
		1 1/4"	9	3	3	4	3	9	3	3	4	3																				
	88" SPAN	3"	16	13	7	13	13	13	13	6	13	13	16	13	6	13	13	11	11	5	11	11	13	13	6	13	13					
		2"	15	13	6	13	13	12	12	5	12	12	13	13	5	13	13	10	10	4	10	10	13	13	5	13	13					
		1 1/4"	14	13	6	13	13	10	10	4	10	10	12	12	4	12	12	9	9	3	9	9	12	12	4	12	12					
	88" SPAN	3"	13	10	6	13	13	10	8	5	10	10	11	5	5	7	8	8	4	4	5	6	11	5	5	7	8					
		2"	12	9	5	12	12	9	7	4	9	9	10	6	4	6	7	7	3	3	5	5	10	6	4	6	7					
		1 1/4"	11	8	4	11	11	8	6	3	8	8	9	4	3	6	6	7	3	3	4	5	9	4	3	6	6					
	105" span	3"	11	5	5	7	8	8	4	4	5	6	9	3	4	4	3	7														
		2"	10	5	4	7	7	7	4	3	5	6	8	3	3	4	3	6														
		1 1/4"	9	4	3	6	7	7	3	3	4	5	8	3	3	4	3	6														
	124" span	3"	9	3	4	4	3	7																								
		2"	8	3	3	4	3	6																								
		1 1/4"	8	3	3	4	3	6																								
	88" SPAN	3"	16	13	11	13	13	16	13	7	13	13	16	13	9	13	13	13	13	8	13	13	16	13	9	13	13					
		2"	16	13	9	13	13	14	13	6	13	13	16	13	8	13	13	12	12	6	12	12	16	13	8	13	13					
		1 1/4"	16	13	8	13	13	13	13	6	13	13	16	13	6	13	13	10	10	4	10	10	16	13	6	13	13					
	88" SPAN	3"	16	13	9	13	13	12	9	5	12	12	16	8	7	11	12	10	5	4	6	7	16	8	7	11	12					
		2"	16	13	7	13	13	11	8	4	11	11	15	7	6	10	11	9	4	4	6	6	15	7	6	10	11					
		1 1/4"	16	13	6	13	13	10	7	4	10	10	14	7	6	9	10	8	4	3	5	6	14	7	6	9	10					
	105" span	3"	16	8	7	11	13	10	5	4	7	8	15	5	6	7	5	8	3	4	4	3	15	5	6	7	5					
		2"	16	7	6	10	12	9	4	4	6	7	13	6	5	6	5	8	3	3	4	3	13	6	5	6	5					
		1 1/4"	14	7	5	9	10	8	4	3	5	6	12	4	4	5	4	7														
	124" span	3"	15	5	6	7	5	8	3	4	4	3																				
		2"	13	5	5	6	5	8	3	3	4	3																				
		1 1/4"	12	4	4	5	4	7																								
	88" SPAN	3"	16	13	12	13	13	16	13	7	13	13	16	13	10	13	13	13	13	6	13	13	16	13	10	13	13					
		2.5"	16	13	10	13	13	14	13	6	13	13	16	13	9	13	13	12	12	5	12	12	16	13	9	13	13					
		2"	16	13	8	13	13	13	13	6	13	13	16	13	7	13	13	10	10	4	10	10	16	13	7	13	13					
	88" SPAN	3"	16	13	9	13	13	12	9	5	12	12	16	10	8	13	13	10	5	4	6	7	16	10	8	13	13					
		2.5"	16	13	8	13	13	11	8	5	11	11	16	9	7	12	13	9	4	4	6	6	16	9	7	12	13					
		2"	16	13	6	13	13	10	7	4	10	10	16	8	6	11	12	8	4	3	5	6	16	8	6	11	12					
	105" span	3"	16	10	8	13	13	10	5	4	7	8	16	8	7	8	9	8	3	4	4	3	16	8	7	8	9					
		2.5"	16	9	7	13	13	9	4	4	6	7	16	8	6	8	9	8	3	3	4	3	16	8	6	8	9					
		2"	16	8	6	11	13	8	4	3	5	6	14	5	4	7	3	7														
	124" span	3"	16	6	7	8	7	8	3	4	4	3																				
		2.5"	16	6	6	8	6	8	3	3	4	3																				
		2"	14	5	4	7	5	7																								

NOTES:

SPANS AND LOADS SHOWN IN THIS SCHEDULE ARE FOR DETERMINING ANCHOR SPACING ONLY. FOR ALLOWABLE SPANS VS. DESIGN LOADS REFER TO SHEET 4.

MINIMUM ENBEDMENT AND EDGE DISTANCE EXCLUDES STUCCO AND/OR WALL FINISHES.

SHADED AREAS REPRESENT ANCHOR CONDITIONS THAT ARE NOT ACCEPTABLE.

IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE SOUNDNESS OF THE STRUCTURE TO WITH STAND THE ADDITIONAL LOADS AND INSURE PROPER ANCHORAGE. SHUTTER SYSTEM MAY BE INTSALL INTO WOOD, CONCRETE OR MASONRY.

PRODUCT RENEWED
as complying with the Florida
Building Code
Acceptance No 12-0320.26
Expiration Date 03/22/2017

By *Healy A. Miller*
Miami Dade Product Control

PRODUCT RENEWED
as complying with the Florida
Building Code
Acceptance No 11-0304.01
Expiration Date 03/22/2012

By *Healy A. Miller*
Miami Dade Product Control

PRODUCT REVISED
as complying with the Florida
Building Code
Acceptance No 06-0110.04
Expiration Date 03/22/2011

By *Healy A. Miller*
Miami Dade Product Control
Division

ROBERT S. MONSOUR, PE
EB-0006024
RAMS ENGINEERING, INC.

REVISIONS	BY
03/20/98	SP
06/12/98	SP
08/14/98	SP
12/15/00	SP
01/17/01	SP
01/05/06	SP

ANCHOR SCHEDULE

NOTES:

SPANS AND LOADS SHOWN IN THIS SCHEDULE ARE FOR DETERMINING ANCHOR SPACING ONLY. FOR ALLOWABLE SPANS VS. DESIGN LOADS REFER TO SHEET 4.

MINIMUM ENBEDMENT AND EDGE DISTANCE EXCLUDES STUCCO AND/OR WALL FINISHES.

SHADED AREAS REPRESENT ANCHOR CONDITIONS THAT ARE NOT ACCEPTABLE.

IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE SOUNDNESS OF THE STRUCTURE TO WITH STAND THE ADDITIONAL LOADS AND INSURE PROPER ANCHORAGE. SHUTTER SYSTEM MAY BE INTALL INTO WOOD, CONCRETE OR MASONRY.

ANCHOR SPACING vs DESIGN PRESSURE AND CONNECTION TYPE			UP TO 81.5 PSF										UPTO 91.4 PSF									
ANCHOR TYPE	PANEL	E.D.	POURED CONCTETE					CONCRETE BLOCK					POURED CONCTETE					CONCRETE BLOCK				
			CONNECTION TYPE					CONNECTION TYPE					CONNECTION TYPE					CONNECTION TYPE				
	68" SPAN	3"	15	10	6	13	13	16	10	7	13	13	13	7	5	9	11	13	7	6	9	11
		2"	14	9	5	13	13	14	9	6	13	13	12	6	4	8	9	12	6	5	8	10
		1 1/4"	12	8	4	12	12	12	8	4	12	12	11	5	3	7	9	11	5	4	7	9
	88" SPAN	3"	12	4	5	6	5	12	5	5	6	5	11	3	4	5	3	11	4	5	5	3
		2"	11	4	4	5	4	11	4	4	5	5	9	3	3	4	3	10	3	4	4	3
		1 1/4"	10	4	3	5	4	10	4	3	5	4	9	3	3	4	3	9	3	3	4	3
	105" span	3"																				
		2"																				
		1 1/4"																				
	124" span	3"																				
		2"																				
		1 1/4"																				
	68" SPAN	3"	13	8	5	12	13	9	6	4	9	9	11	5	5	8	9	8	4	4	6	7
		2"	11	7	5	11	11	8	5	4	8	8	10	5	4	7	8	8	4	3	5	6
		1 1/4"	10	7	4	10	10	8	5	3	7	8	9	4	3	6	7	7	3	3	4	5
	88" SPAN	3"	10	4	4	5	4	7	3	3	4	3	9	3	4	4	3	7		3	3	
		2"	9	3	3	4	4	7		3	3	3	8	3	3	3		6		3		
		1 1/4"	8	3	3	4	3	6			3		7		3	3		6				
	105" span	3"																				
		2"																				
		1 1/4"																				
	124" span	3"																				
		2"																				
		1 1/4"																				
	68" SPAN	3"	16	13	8	13	13	11	7	5	11	11	16	8	7	12	13	10	5	4	7	8
		2"	16	11	7	13	13	10	6	4	10	10	16	8	6	10	12	9	4	4	6	7
		1 1/4"	16	10	6	13	13	9	6	3	9	9	14	7	5	9	11	8	4	3	5	6
	88" SPAN	3"	15	6	6	8	6	9	3	4	4	4	14	4	6	6	4	8	3	3	3	3
		2"	14	5	5	7	6	8	3	3	4	3	12	4	5	5	4	7		3		
		1 1/4"	12	5	4	6	6	7	3	3	4	3	11	4	4	5	3	6				
	105" span	3"																				
		2"																				
		1 1/4"																				
	124" span	3"																				
		2"																				
		1 1/4"																				
	68" SPAN	3"	16	13	9	13	13	11	7	5	11	11	16	10	8	13	13	10	6	4	7	8
		2.5"	16	13	7	13	13	10	7	4	10	10	16	9	7	13	13	9	4	4	6	7
		2"	16	12	6	13	13	9	6	3	9	9	16	8	5	12	13	8	4	3	5	6
	88" SPAN	3"	16	7	7	9	8	9	3	4	4	4	16	6	6	7	6	8	3	3	3	3
		2.5"	16	6	6	8	7	8	3	3	4	3	15	6	6	6	6	7		3		
		2"	15	6	4	8	6	7	3	3	4	3	13	4	4	6	4	6				
	105" span	3"																				
		2.5"																				
		2"																				
	124" span	3"																				
		2.5"																				
		2"																				

PRODUCT RENEWED
as complying with the Florida
Building Code
Acceptance No 12-0320-26
Expiration Date 03/22/2017
By *Healy A. Healy*
Miami Dade Product Control

PRODUCT RENEWED
as complying with the Florida
Building Code
Acceptance No 11-0304-01
Expiration Date 03/22/2012
By *Healy A. Healy*
Miami Dade Product Control

PRODUCT REVISED
as complying with the Florida
Building Code
Acceptance No 06-0110-04
Expiration Date 03/22/2011
By *Healy A. Healy*
Miami Dade Product Control
Division

Robert S. Monsour
ROBERT S. MONSOUR, PE
EB-0006024
RAMS ENGINEERING, INC.

BUILDING CODE COMPLIANCE

RAMS ENGINEERING, INC.

Structural Design

2100 W. 70th STREET, SUITE 311
MIAMI, FLORIDA 33156


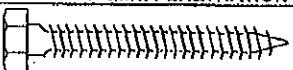
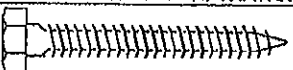
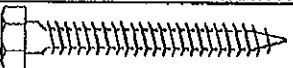
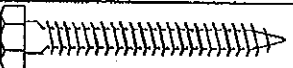
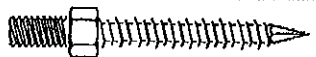
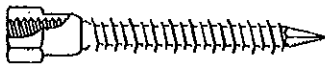
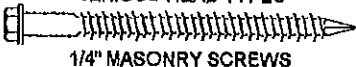
EB 0006024

METALTECH, INC.

EST. 1957
7635 W. SECOND CT. MIAMI, FL 33014

SEP/JRB/RSB
01/10/88
SHOWN
88001
6
7

ANCHOR SCHEDULE

WOOD APPLICATIONS			UP TO 59.5 PSF					UP TO 71.5 PSF					UP TO 81.5 PSF					UP TO 91.4 PSF						
ANCHOR TYPE		DIA.	SPAN		CONNECTION TYPE					CONNECTION TYPE					CONNECTION TYPE					CONNECTION TYPE				
			A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E		
	BRASS WOOD BUSHING	1/4-20	68" SPAN	14	13	5	13	13	12	12	5	12	12	10	7	4	10	10	9	4	4	6	7	
			88" SPAN	11	8	4	11	11	9	4	3	6	7	8	3	3	4	3	7		3	3		
			105" SPAN	9	4	4	6	7	8	3	3	4	3											
			124" SPAN	8	3	3	4	3																
1" MIN. PENETRATION																								
	WOOD LAGS	1/4"	68" SPAN	16	13	8	13	13	15	13	8	13	13	14	9	6	13	13	12	6	5	8	9	
			88" SPAN	14	11	6	13	13	12	6	5	8	9	10	4	4	5	4	9	3	4	4	3	
			105" SPAN	12	6	5	8	9	10	4	4	5	4											
			124" SPAN	10	4	3	5	4																
1" MINIMUM TREAD PENETRATION																								
	WOOD LAGS	5/16"	68" SPAN	16	13	10	13	13	16	13	8	13	13	16	10	7	13	13	14	7	6	9	11	
			88" SPAN	16	13	7	13	13	14	7	6	9	10	12	5	5	6	5	11	4	5	5	3	
			105" SPAN	14	7	6	9	10	12	4	5	6	4											
			124" SPAN	12	4	5	6	4																
1" MINIMUM TREAD PENETRATION																								
	WOOD LAGS	3/8"	68" SPAN	16	13	11	13	13	16	13	9	13	13	16	12	8	13	13	16	8	7	11	13	
			88" SPAN	16	13	9	13	13	16	8	7	10	12	14	5	6	7	6	13	4	6	5	4	
			105" SPAN	16	8	7	11	12	14	5	6	6	5											
			124" SPAN	13	5	6	6	5																
1" MINIMUM TREAD PENETRATION																								
	WOOD LAGS	7/16"	68" SPAN	16	13	12	13	13	16	13	10	13	13	16	13	9	13	13	16	9	8	12	13	
			88" SPAN	16	13	9	13	13	16	8	8	12	13	16	6	7	8	7	14	5	6	6	4	
			105" SPAN	16	9	8	12	13	15	5	7	7	6											
			124" SPAN	15	5	7	7	6																
1" MINIMUM TREAD PENETRATION																								
	1/4" ELCO PANEL MATES	1/4"	68" SPAN	16	13	8	13	13	15	13	6	13	13	14	9	6	13	13	12	6	5	8	9	
			88" SPAN	14	11	6	13	13	12	6	5	8	9	10	4	4	5	4	9	3	4	4	3	
			105" SPAN	12	6	5	8	9	10	4	4	5	4											
			124" SPAN	10	4	3	5	4																
1 7/8" MIN. THREAD PENETRATION																								
	1/4" ELCO PANEL MATES	1/4"	68" SPAN	16	13	8	13	13	15	13	6	13	13	14	9	6	13	13	12	6	5	8	9	
			88" SPAN	14	11	6	13	13	12	6	5	8	9	10	4	4	5	4	9	3	4	4	3	
			105" SPAN	12	6	5	8	9	10	4	4	5	4											
			124" SPAN	10	4	3	5	4																
1 7/8" MIN. THREAD PENETRATION																								
	VERIOUS HEAD TYPES	1/4"	68" SPAN	16	13	8	13	13	15	13	6	13	13	14	9	6	13	13	12	6	5	8	9	
			88" SPAN	14	11	6	13	13	12	6	5	8	9	10	4	4	5	4	9	3	4	4	3	
			105" SPAN	12	6	5	8	9	10	4	4	5	4											
			124" SPAN	10	4	3	5	4																
1 7/8" MIN. THREAD PENETRATION																								

NOTES:

SPANS AND LOADS SHOWN IN THIS SCHEDULE ARE FOR DETERMINING ANCHOR SPACING ONLY. FOR ALLOWABLE SPANS VS. DESIGN LOADS REFER TO SHEET 4.

WHEN ANCHORING TO WOOD, THE WOOD MUST BE A MINIMUM 2 X 4 EQUAL TO #2 SOUTHERN PINE 0.55 SPECIFIC GRAVITY AND STRUCTURALLY PART OF THE FRAMING STRUCTURE OR SECURELY ATTACHED TO FRAMING STRUCTURE

SHADED AREAS REPRESENT ANCHOR CONDITIONS THAT ARE NOT ACCEPTABLE.

IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE SOUNDNESS OF THE STRUCTURE TO WITH STAND THE ADDITIONAL LOADS AND INSURE PROPER ANCHORAGE. SHUTTER SYSTEM MAY BE INSTALLED INTO WOOD, CONCRETE OR MASONRY.

ROBERT S. MONSOUR, PE
EB-0006024
RAMPS ENGINEERING, INC.

PRODUCT RENEWED
as complying with the Florida
Building Code
Acceptance No 12-0320.26
Expiration Date 03/22/2017
By *Helmy A. M. M.*
Miami Dade Product Control

PRODUCT RENEWED
as complying with the Florida
Building Code
Acceptance No 11-0304.01
Expiration Date 03/22/2012
By *Helmy A. M. M.*
Miami Dade Product Control

PRODUCT REVISED
as complying with the Florida
Building Code
Acceptance No 06-0110.04
Expiration Date 03/22/2011
By *Helmy A. M. M.*
Miami Dade Product Control

BUILDING CODE COMPLIANCE

REVISIONS	BY
08/14/98	SP
01/17/01	SP
01/05/06	SP

RAMPS ENGINEERING, INC.
Structural Design
2100 W. 78th STREET, SUITE 313
MAYAGUEZ, FLORIDA 33054
EE 0006024

METALTECH, INC.
EST. 1957
7835 W. SECOND CT. MIAMI, FL 33014

SEP/198/RSN
01/10/88
SHOWN
98001
7